

⑨ 日本国特許庁(JP)

⑩ 特許出願公開

⑫ 公開特許公報(A)

平3-136614

⑤ Int. Cl.⁵

識別記号

庁内整理番号

⑬ 公開 平成3年(1991)6月11日

A 47 J 27/00
B 65 D 81/34

V 8319-4B
7191-3E

審査請求 未請求 請求項の数 2 (全6頁)

⑭ 発明の名称 熱発生調理機を利用した飲食品調理パック

⑯ 特 願 平1-194381

⑰ 出 願 平1(1989)7月28日

⑱ 発 明 者	大 山 義 夫	山形県山形市花楸2丁目1番41号
⑲ 出 願 人	大 山 義 夫	山形県山形市花楸2丁目1番41号
⑲ 出 願 人	森 房 子	宮城県仙台市太白区鉤取字新田町37の2
⑲ 出 願 人	高 原 洪 甲	東京都中野区中央2丁目30番1号
⑳ 代 理 人	弁理士 木下 洋平	外1名

明 細 書

1. 発明の名称

熱発生調理機を利用した飲食品調理パック

2. 特許請求の範囲

(1) 上面に蒸気圧抜き孔が下面に熱湯抜き孔が夫々形成された耐熱性の外袋と、

飲食品を収納し前記外袋内に具えられた、熱湯の通過を許容する耐熱性の飲食品収納袋と、

液体を収納して、前記飲食品収納袋の上に重ねられて前記外袋内に具えられた、耐熱性の液体収納袋とを有し、

前記外袋が加熱されたとき、前記液体収納袋内の前記液体が沸騰し、熱湯が前記飲食品収納袋上に流出することを特徴とする、

飲食品調理パック。

(2) 食品を収納し、上面に蒸気圧抜き孔が形成された耐熱性の外袋と、

液体を収納して、前記外袋内に具えられた、耐熱性の液体収納袋とを有し、

前記外袋が加熱されたとき、前記液体収納袋内

の前記液体が沸騰し、前記液体が前記液体収納袋外に流出することを特徴とする、

食品調理パック。

3. 発明の詳細な説明

産業上の利用分野

本発明は、コーヒー、紅茶、煮物、蒸し物等の各種飲物、嗜好品、食品等(以下、単に「飲食品」という。)をパックしておき、蒸り、味、硬度等を損なうことなく保存しておくとともに、電子レンジのような熱発生調理機によりその飲食品を簡単に飲食できる状態にすることができる飲食品調理パックに関する。

従来技術及びその課題

従来、調理の手間を省くため、いつでも簡単に手に入り、且つ、容易に飲食できる状態にできるものとして、各種の冷凍食品、加工食品、電子レンジ食品等が利用されている。

ところが、冷凍食品は、解凍に手間がかかるとともに、食品の味が悪くなるという問題点を有している。

又、加工食品は、既に味付けがしてあるため、長期間経過すると味が低下してくるとともに、パッケージに費用がかかる。

電子レンジ食品は加熱しただけで食べられるものが多いが、品種が限られており、味付けも簡単なものに限られるという問題点を有している。

そして、茶、コーヒーのような加熱を要する飲料は、一般に用意するのに手間がかかり、加熱するだけで飲むことができる状態になるようなものは従来なかった。

課題を解決するための手段

本発明は、第1発明の、上面に蒸気圧抜き孔が下面に熱湯抜き孔が夫々形成された耐熱性の外袋と、飲食品を収納し前記外袋内に具えられた、熱湯の通過を許容する耐熱性の飲食品収納袋と、液体を収納して、前記飲食品収納袋の上に重ねられて前記外袋内に具えられた、耐熱性の液体収納袋とを有し、前記外袋を加熱したとき、前記液体収納袋内の前記液体が沸騰し、熱湯が前記飲食品収納袋上に流出することを特徴とする飲食品調理パ

を加えると液体収納袋内の液体が沸騰し、液体収納袋が膨れる。液体収納袋内の蒸気圧が或る一定の圧力になると、液体収納袋の熱湯が流れ出て、外袋内が蒸気圧になる。空になった液体収納袋は外袋内の蒸気圧によって、外袋の上側内面に押し上げられる。この結果、外袋に別に入れられている食品を煮たり、蒸したりすることが出来る。そして、蒸気圧は蒸気抜き孔から逃げ、外袋の過度の膨張、爆発は防止される。

実施例

以下、本発明の実施例を図面に基づいて説明する。

飲食品パック10は、外袋11、水収納袋12、飲食品収納袋13で構成されている。

外袋11は、約120度の高温から、零下約40度までの低温に範囲において使用に耐えられる、耐熱、耐寒性に優れた2枚の合成樹脂素材を重ね、周囲を熱シールを施して接合して袋状に作られている。なお、低温にされることがない場合は、勿論耐寒性は必要としない。外袋11の上面20

ックと、第2発明の、食品を収納し、上面に蒸気圧抜き孔が形成された耐熱性の外袋と、液体を収納して、前記外袋内に具えられた、耐熱性の液体収納袋とを有し、前記外袋が加熱されたとき、前記液体収納袋内の前記液体が沸騰し、前記液体収納袋外に流出することを特徴とする、食品調理パックとにより、前記の課題を解決したものである。

作 用

第1発明では、外袋を熱発生調理機に入れ、熱を加えると液体収納袋内の液体が沸騰し、液体収納袋が膨れる。液体収納袋内の蒸気圧が或る一定の圧力になると、液体収納袋の熱湯が外袋内に流れ出て、外袋内が蒸気圧になる。空になった液体収納袋は外袋内の蒸気圧によって、外袋の上側内面に押し上げられる。そして、熱湯は食品収納袋を通して外袋の熱湯抜き孔からコーヒー、紅茶として外部に流れ出る。外袋内が蒸気圧になった後は、蒸気圧抜き孔から蒸気圧を逃がすことができ、外袋の過度の膨張、爆発は防止される。

第2発明では、外袋を熱発生調理機に入れ、熱

には蒸気圧抜き孔21が、下面22には熱湯抜き孔23が夫々形成されている。外袋11は後述するように内部が高圧になるので、孔21、23が裂けないように孔21、23と同径の孔24、25を有した補強用シール26、27が上面20の外側と下面22の内側に貼りつけてある。上面20の内側には孔21と同径の孔28を有した水蒸気圧排出調整パッキンシール29が貼りつけてある。水蒸気圧排出調整パッキンシール29は、水に強く、通気性と弾性に優れた厚み2mm乃至5mm程度の発泡ポリエステル、植毛ウレタンフォーム等からなるものである。

水収納袋12も外袋11と同様の合成樹脂素材を同様に2枚重ねて周囲を熱シールを施し接合して袋状に作られており、水Wを収納している。下面30には熱湯抜き孔31が形成されており、内面に補強用シール34が貼りつけてある。孔31は外面に水収納袋12内の水蒸気圧を集中させるための糸32（或いは繊維素材からなるネット）が横切るようにして、シール33とともに貼り付

けられている。

水収納袋12は熱湯抜き孔31を下側にして食品収納袋13の上に重ねて外袋11に収納されている。

飲食品収納袋13は、紅茶、日本茶、烏龍茶等の嗜好品Aを収納しており、耐熱、耐寒性に優れた2枚の合成樹脂素材からなる網毛ネット又は不織物の布を重ね、周囲を幅5mm乃至10mm程度に接合して作られ、透過袋の役目もしている。コーヒーの挽き豆を収納する場合は、第7図に示す飲食品収納袋14のように、挽き豆は上下から透過紙40によって挟まれているか、或いは下側のみ透過紙を具えている(図示省略)。

飲食品収納袋13、14の下面には、紅茶、或いは、コーヒーになった熱湯の通過を迅速且つ円滑に行なう目的と、飲食品収納袋内の圧力調整機能を円滑に行なうために、1本または数本もしくはクロスする形で約0.5mm程度の合成樹脂素材繊維糸或いはネット41が具えられている。

飲食品収納袋13は外袋11の下面22内側に

パッキンシール28の凹凸弾力差により水収納袋12との間に若干の隙間を生じ、外袋11内の水蒸気が蒸気圧抜き孔21から外袋11内部圧力を一定圧力に調整しながら噴出し、外袋11の膨張が防止されるとともに、外袋11内部圧力により強制的に湯抜き効果を促進させる役目を果たしている。

次に、第10図乃至第13図は他の一実施例で、煮魚、おでん等の煮物食品を調理することのできる食品パック50である。

この食品パック50は、外袋51、液体収納袋52、飲食品Fで構成されている。

外袋51は、前記外袋11と同様に、耐熱、耐寒性に優れた2枚の合成樹脂素材を重ね、周囲を熱シールを施して袋状に作られている。外袋51の上面60と下面62の間には水、スープ、出汁(だしじり、いわゆる「だし」)等の液体を通過させやすい合成樹脂素材からなる網毛ネット又は不織布等の仕切りシート68が具えられている。外袋51の上面60には蒸気圧抜き孔61

熱シールを施して貼り付けられている。

尚、コーヒー1杯分の平均的標準量は挽き豆7g乃至10gに対し水20.0g乃至22.0gである。

次に動作を説明する。

熱湯抜き孔23を下にして飲食品パック10を容器Cの上に重ね、容器Cとともに電子レンジに入れ熱を加える。或る程度時間が経過すると、水収納袋12内の水が沸騰し、水蒸気圧により水収納袋12は膨れ始め、上面35が外袋11の上面20内側に密着し、蒸気圧抜き孔21を塞ぐ。水収納袋12はさらに膨れ、或る一定の水蒸気圧になると、糸或いはネット32に水蒸気圧が集中的に加わり、シール33が割れ、沸騰した湯が熱湯抜き孔31から噴出する。すると、今度は外袋11内が水蒸気圧になり、湯が飲食品収納袋13のみを通過して、外袋11の熱湯抜き孔23から、紅茶、或いはお茶となって、容器C内に噴出する。一方、空になった水収納袋12は裏面外袋11の上面20の内面に押付けられ、水蒸気圧排出調整

が形成されている。外袋51は孔61が蒸気圧によって膨けないように孔61と同径の孔64を有する補強用シール66が外側に、水蒸気圧排出調整パッキンシール69が内側に貼りつけてある。水蒸気圧排出調整パッキンシール69は水に強く通気性の優れた厚み2mm乃至5mm程度の発砲ポリエステル、植毛ウレタンフォーム等からなる。

液体収納袋52も前記外袋11と同様の合成樹脂素材を2枚重ねにして周囲に熱シールを施して接合して袋状に作られ、出汁Sを収納している。下面70には液体抜き孔71が形成されており、孔71には、図示しないが前記水収納袋12と同様に、外面に液体収納袋72内の水蒸気圧を集中させるための糸(或いは繊維素材からなるネット)が横切るようにして、シール73と一緒に貼り付けられている。

液体収納袋52は孔71を下側にして仕切りシート68と外袋51の上面60との間に具えられている。

飲食品Fが魚であるときは、鰯及び内蔵等を処

理して、且つ、種類によって丸ごと、或いは、食べやすい大きさに一次処理した生又は冷凍状態になっており、味付け調理をすれば直ちに食べられる状態になっている。

次に動作を説明する。

出汁約100g、飲食品Fが魚約200gの場合について説明する。

飲食品Fを下側に電子レンジに入れ熱を加える。入れてから約2分20秒経過すると食品F(魚)が冷凍されている場合は解凍され、液体収納袋52内の出汁が沸騰を開始する。その後、約25秒経過すると蒸気圧により、液体収納袋52は膨れ始め上面75が外袋11の上面60内側に密着し、蒸気抜き孔51を塞ぐ。液体収納袋52はさらに膨れ、或る一定の蒸気圧になると、液体抜き孔71に貼ってある糸(図示省略)に蒸気圧が集中的に加わり、シール73が割がれ、沸騰した出汁が液体抜き孔71から噴出する。すると、今度は外袋51内が蒸気圧になり、出汁が仕切りシート68を透過されながら通過して外袋51下

面の内側に溜り、飲食品Fは出汁に浸る。一方、空になった液体収納袋52は委み、外袋51の上面の内面に押付けられ蒸気圧排出調整パッキンシール69の凹凸弾力差により液体収納袋52との間に隙間を生じ、外袋51内の蒸気が蒸気抜き孔61から外袋51内部蒸気圧力を低下させない程度に調整噴出するので、外袋51の爆発が防止されるとともに、外袋51内部の蒸し効果を最大限に発揮させる役目をしている。外袋51の下部内部は仕切りシートにより、上部温度(約95度乃至約100度)より若干高い温度(約105度乃至約120度)の状態を作り上げ、圧力と蒸気対流によって蒸し効果を引き出し、出汁が魚にほどよく浸透し、身崩れ、形崩れが起きることなく、味付けが行なわれる。

出汁が噴出してから約1分45秒経過すると、味付けが終了する。その後、外袋51を開封して魚を取出す。

なお、以上の説明では、煮魚に出汁を込み込ませて調理する説明をしたが、これまでの説明とは

逆に、液体(水)収納袋を下側に、食品を上側に配置しておく、上側の食品を下側から発生する蒸気によって蒸すという調理方法が可能となる。その際、液体収納袋は、蒸気抜き孔を具えた外側の耐熱性袋に収納しておくこととよい。この場合、水に酒類を混ぜておくと、さらに優れた味付けをすることができることはいうまでもない。

また、液体収納袋内の液体が一定の蒸気圧のもとで外に流出するようにするには、必ずしも図示したようなシールによらず、袋自体が破裂するようにしてもよい。

なお、液体収納袋を調味類別にパックしておいて、水をベースとしたスープ類を自動的に外袋51内で作ることも可能である。

発 明 の 効 果

以上に説明した、本発明の飲食品調理パックによると、電子レンジのような熱発生調理機を使用した、全く新しい、簡便で、且つ、優れた味付けのできる飲食品の調理方法を提供することができる。その件及に多大な貢献をすることができる。

又、冷凍食品業界において、元来一次、二次調理素材として扱われ、保存食品として扱われなかった素材に、全く手を加えることなく、インスタント風に取り扱いによって簡単に調理ができるようになるので、冷凍食品の有効利用ができ、料理コストを下げるができる。

更に、熱発生調理機内に入れて熱を加えるだけでコーヒー、お茶等の嗜好品が飲める状態となり、或いは、種々の食品に従来なかった優れた味付けを行なうことができるという顕著な効果を奏することができる。

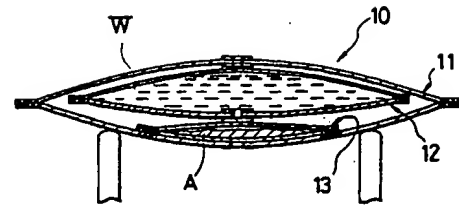
4. 図面の簡単な説明

第1図は本発明の飲食品調理パックの概略断面図、第2図は外袋の断面図、第3図は液体(水)収納袋の断面図、第4図は液体収納袋の熱湯抜き孔付近の詳細図、第5図は第4図中5-5矢視断面図、第6図は飲食品収納袋の断面図、第7図は第6図と異なる形態の飲食品収納袋の断面図、第8図、第9図は動作説明図、第10図は他の実施例の食品調理パックの概略断面図、第11図は外

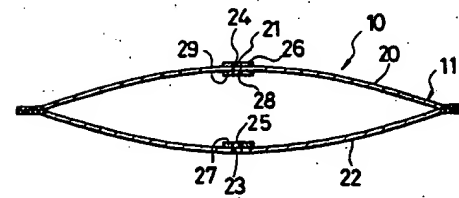
袋の断面図、第12図、第13図は動作説明図である。

- | | |
|------------------|--------------|
| 10, 50... 飲食品パック | |
| 11, 51... 外袋 | 12... 液体収納袋 |
| 13... 飲食品収納袋 | 20, 60... 上面 |
| 21, 61... 蒸気圧抜き孔 | 22, 62... 下面 |
| 23... 熱湯抜き孔 | 31... 熱湯抜き孔 |
| 33, 73... シール | |
| 52... 液体収納袋 | 71... 液体抜き孔 |
| W... 水 | F... 食品 |

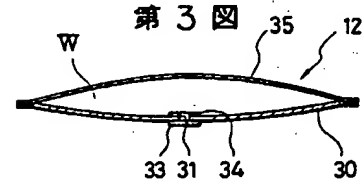
第1図



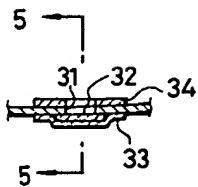
第2図



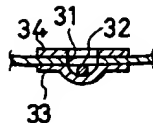
第3図



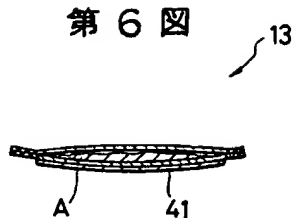
第4図



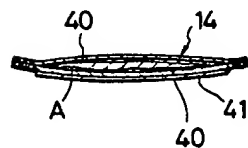
第5図



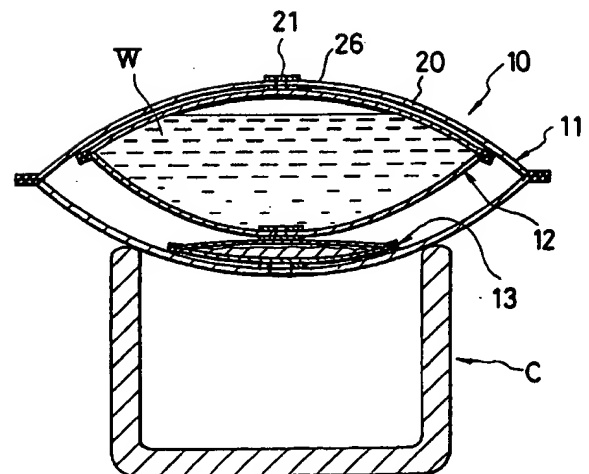
第6図



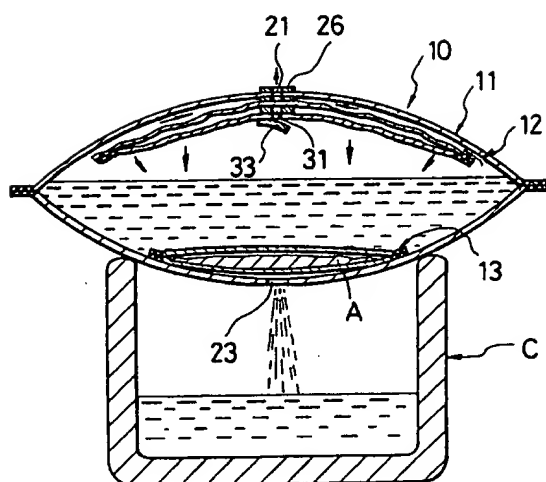
第7図



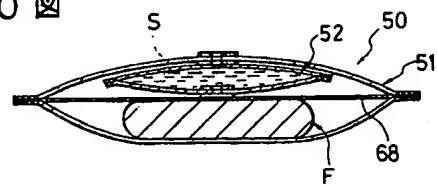
第8図



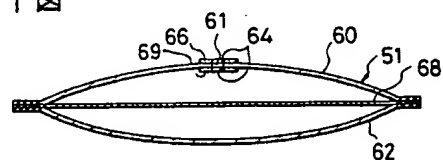
第 9 図



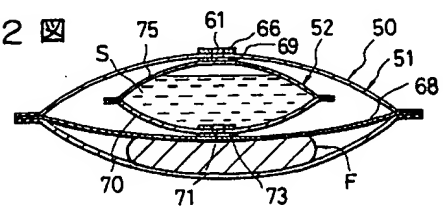
第 10 図



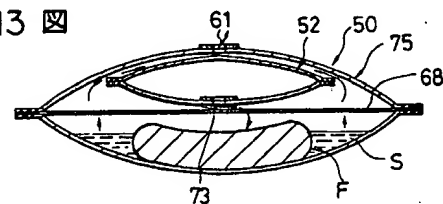
第 11 図



第 12 図



第 13 図



PTO 01-4274

CY=JP DATE=19910611 KIND=A
PN=03-136614

FOOD/DRINK COOKING PACK THAT UTILIZES HEAT-GENERATING COOKING
APPARATUSES

[Netsu Hassei Choriki wo Riyosita In'shokuhin' Chori Pakku]

Yoshio Ooyama

UNITED STATES PATENT AND TRADEMARK OFFICE
Washington, D. C. September 2001

Translated by: FLS, Inc.

PUBLICATION COUNTRY	(10):	JP
DOCUMENT NUMBER	(11):	03136614
DOCUMENT KIND	(12):	A
	(13):	PUBLISHED UNEXAMINED APPLICATION (Kokai)
PUBLICATION DATE	(43):	19910611
PUBLICATION DATE	(45):	
APPLICATION NUMBER	(21):	01194381
APPLICATION DATE	(22):	19890728
ADDITION TO	(61):	
INTERNATIONAL CLASSIFICATION	(51):	A47J 27/00; B65D 81/34
DOMESTIC CLASSIFICATION	(52):	
PRIORITY COUNTRY	(33):	
PRIORITY NUMBER	(31):	
PRIORITY DATE	(32):	
INVENTOR	(72):	OOYAMA, YOSHIO
APPLICANTS	(71):	OOYAMA, YOSHIO; MORI, FUSAKO; TAKAHARA, KOKI
TITLE	(54):	FOOD/DRINK COOKING PACK THAT UTILIZES HEAT- GENERATING COOKING APPARATUSES
FOREIGN TITLE	[54A]:	Netsu Hassei Choriki wo Riyosita In'shokuhin' Chori Pakku

1. Title

Food/Drink Cooking Pack That Utilizes Heat-Generating
Cooking Apparatuses

2. Claims

(1) A food/drink cooking pack that has a heat-resistant
outer bag that has a steam-pressure-releasing vent at the top
surface and a hot-water-draining opening at the bottom surface,

a heat-resistant food/drink container bag that is placed
inside the aforesaid outer bag with food/drink inside the
container bag and that allows hot water to pass through it, and

a heat-resistant liquid container bag that contains a liquid
and that is placed on top of the aforesaid food/drink container
bag inside the aforesaid outer bag,

said pack being characterized by the fact that, when the
aforesaid outer bag is heated, the liquid inside the liquid
container bag boils, and the hot water flows out over the
food/drink container bag.

(2) A food/drink cooking pack that has a heat-resistant
outer bag that contains food and that has a steam-pressure-
releasing vent at the top surface and

*Number in the margin indicates pagination in the foreign
text.

a heat-resistant liquid container bag that contains a liquid and that is placed inside the aforesaid outer bag,

said pack being characterized by the fact that, when the aforesaid outer bag is heated, the liquid inside the liquid container bag boils, and the liquid flows out of the liquid container bag.

3. Detailed Description of the Invention

[Industrial Field of Application]

The present invention pertains to a food/drink pack that is used for packaging various kinds of drinks, table luxuries, food, etc., (hereinafter simply referred to as "food/drink"), such as coffee, tea, cooked food, steamed food, etc., so as to preserve them without losing their fragrance, taste, freshness, etc., and that can bring the food/drink into an edible/drinkable state easily, using a heat-generating cooking apparatus, such as a microwave oven.

[Prior Art and Its Problems]

Various kinds of frozen food, processed food, microwavable food, etc., which are readily available and can be prepared easily to be eaten or drunk, have been utilized to save trouble of cooking.

Frozen food, however, takes time to defrost, and the food loses its flavor.

Because processed food is already seasoned, the taste deteriorates after a long period of time, and it requires costly packaging.

/122

Many microwavable foods can be eaten simply by heating, but their varieties are limited, and they are usually seasoned in simple and limited ways.

Drinks, such as tea and coffee, that require heating, take time to prepare in general, and there is no drink that could be brought to a drinkable state simply by heating.

[Means of Solving the Problems]

The present invention solves the aforesaid problems by providing a first invention, that is, a food/drink cooking pack that has a heat-resistant outer bag that has a steam-pressure-releasing vent at the top surface and a hot-water-draining opening at the bottom surface, a heat-resistant food/drink container bag that is placed inside the aforesaid outer bag with food/drink inside the container bag and that allows hot water to pass through it, and a heat-resistant liquid container bag that contains a liquid and that is placed on top of the aforesaid food/drink container bag inside the aforesaid outer bag, said pack being characterized by the fact that, when the aforesaid outer bag is heated, the liquid inside the liquid container bag boils, and the hot water flows out over the food/drink container bag, and a second invention, that is, a food/drink cooking pack

that has a heat-resistant outer bag that contains food and that has a steam-pressure-releasing vent at the top surface and a heat-resistant liquid container bag that contains a liquid and that is placed inside the aforesaid outer bag, said pack being characterized by the fact that, when the aforesaid outer bag is heated, the liquid inside the liquid container bag boils, and the liquid flows out of the liquid container bag.

[Operation]

With the first invention, when the outer bag is placed inside a heat-generating cooking apparatus and heated, the liquid inside the liquid container bag boils, and the liquid container bag expands. When the steam pressure inside the liquid container bag reaches a given pressure, the hot water inside the liquid container bag flows out into the outer bag, thus creating steam pressure inside the outer bag. The liquid container bag, which has become empty, is pressed upward against the inner side of the top surface of the outer bag by the steam pressure inside the outer bag. Then the hot water passes through the food container bag and flows outside as coffee, tea, etc., through the hot-water-draining opening of the outer bag. After the inside of the outer bag reaches the steam pressure, the steam pressure can be released from the steam-pressure-releasing vent so as to prevent the excessive expansion or explosion of the outer bag.

With the second invention, when the outer bag is placed inside a heat-generating cooking apparatus and heated, the liquid inside the liquid container bag boils, and the liquid container bag expands. When the steam pressure inside the liquid container bag reaches a given pressure, the hot water inside the liquid container bag flows out, thus creating steam pressure inside the outer bag. The liquid container bag, which has become empty, is pressed upward against the inside top surface of the outer bag by the steam pressure inside the outer bag. As a result, food placed separately inside the outer bag is cooked or steamed. The steam pressure escapes through the steam-pressure-releasing vent so as to prevent the excessive expansion or explosion of the outer bag.

[Embodiments]

The following explains embodiments of the present invention, referring to the drawings.

The food/drink pack (10) is composed of an outer bag (11), a water container bag (12), and a food/drink container bag (13).

The outer bag (11) is constructed by laying, one on top of the other, two sheets of a synthetic resin material with excellent heat and cold resistances that can endure use in temperatures ranging from a high temperature of approximately 120° C to a low temperature of approximately -40° C and by heat-sealing the edges of the sheets to form a bag. If the bag will

not be exposed to cold temperatures, the sheets do not need to have cold resistance. A steam-pressure-releasing vent (21) is formed on the top surface (20) of the outer bag (11), while a hot-water-draining opening (23) is formed on the bottom surface (22). Since the inside of the outer bag (11) becomes highly pressurized, as will be discussed later, reinforcement seals (26, 27) that have openings (24, 25) having the same diameters as those of the vent and opening (21, 23) are attached to the external side of the top surface (20) and the internal side of the bottom surface (22) so as to prevent the tearing of the vent and opening (21, 23). Attached to the inside of the top surface (20) is a steam-pressure-discharge-regulating packing seal (29) that has an opening (28) of the same diameter as that of the vent (21). The steam-pressure-discharge-regulating packing seal (29) is comprised of 2 mm to 5 mm-thick polyester foam, flocked urethane foam, etc. that is strong against water and has excellent gas permeability and elasticity.

Similarly, the water container bag (12) is constructed by laying together two sheets of the same synthetic resin material as the one used for the outer bag (11) and by adhering the edges by heat sealing, and it contains water (W). The bottom surface (30) has a hot-water-draining opening (31) formed on it, and a reinforcement seal (34) is attached to the inside of the opening. Attached together with a seal (33) on the external side of the

opening (31) is a string (32) (or a net made from a fiber material), which is run across the opening, for gathering the steam pressure inside the water container bag (12).

/123

The water container bag (12) is placed on top of the food container bag (13), with its hot-water-draining opening (31) positioned at the bottom, and stored inside the outer bag (11).

The food/drink container bag (13) contains a table luxury (A), such as tea, Japanese tea, oolong tea, etc., and it is constructed by laying two sheets of thin-yarn net or unwoven cloth made of a synthetic resin material and by adhering them approximately 5 mm to 10 mm in width along the edges. The container bag also serves as a filter bag. In the case of storing ground coffee beans, the ground coffee beans may be sandwiched by the filter paper (40) from the top and bottom, like the food/drink container bag (14) shown in Figure 7, or they may have filter paper only at the bottom side (not shown).

Provided at the bottom surface of the food/drink container bag (13 or 14) are (one to several strings) or a net (41) comprised of approximately 0.5 mm-synthetic resin fibers in order to pass hot water, which has become tea or coffee, quickly and smoothly and also to facilitate the regulation of the pressure inside the food/drink container bag.

The food/drink container bag (13) is attached to the internal side of the bottom surface (22) of the outer bag (11) by

heat sealing.

One cup of coffee requires an average 7 g to 10 g of ground coffee beans for 200 g to 220 g of water.

The following explains the operation.

With the hot-water-draining opening (23) positioned at the bottom, the food/drink pack (10) is placed on top of a container (C), and the pack together with the container are placed inside a microwave oven and heated. After a passage of a given time, the water inside the water container bag (12) boils, and the bag (12) expands due to the steam-pressure, and the top surface (35) makes intimate contact with the internal side of the top surface (20) of the outer bag (11), thereby closing the steam-pressure-releasing vent (21). When the water container bag (12) continues to expand and a given steam pressure is attained, the application of the steam pressure centers on the string or net (32); consequently, the seal (33) comes off, and the hot boiling water runs out of the hot-water-draining opening (31). Then the inside of the outer bag (11) becomes pressurized by the steam, and the hot water passes through only the food/drink container bag (13), thus turning into tea, green tea, etc., and flows out of the hot-water-draining opening (23) of the outer bag (11) into Container (C). Meanwhile, the water container bag (12), which has become empty, shrinks and is pushed up against the inside of the top surface (20) of the outer bag (11). Owing to the difference in

the elasticity of the convex and concave sides of the steam-pressure-discharge regulating packing seal (28 [sic]), a small gap is created between the water container bag (12) and the inside of the top surface, and the steam inside the outer bag (11) is released from the steam-pressure-releasing vent (21), keeping the inside pressure of the outer bag (11) at a constant pressure, thereby preventing the outer bag (11) from exploding and also promoting the hot-water-draining effect by the pressure inside the outer bag (11).

Another embodiment shown in Figs. 10 to 13 is a food pack (50) that can prepare cooked food, such as cooked fish or Oden [Translator's note: a Japanese hotchpotch dish.]

This food pack (50) is constructed of an outer bag (51), a liquid container bag (52), and a food/drink item (F).

Like the outer bag (11) discussed before, this outer bag (51) is also constructed by laying, one on top of the other, two sheets of a synthetic resin material with excellent heat and cold resistances and by heat-sealing the edges of the sheets to form a bag. Between the top surface (60) and bottom surface (62) of the outer bag (51) is provided a partition sheet (68), such as a fine-yarn net, unwoven cloth, etc., that is comprised of a synthetic resin material and that readily passes liquids, such as water, soup, and broth. A steam-pressure-releasing vent (61) is formed on the top surface (60) of the outer bag (51). The outer

bag (51) has a reinforcement seal (66) that has an opening (64) having the same diameter as that of the vent (61) attached to the external side so as to prevent the tearing of the vent (61) and a steam-pressure-discharge-regulating packing seal (69) attached to the internal side. The steam-pressure-discharge-regulating packing seal (69) is comprised of 2 mm to 5 mm-thick polyester-foam, flocked urethane foam, etc. that is strong against water and has excellent gas permeability.

Similarly, the liquid container bag (52) is constructed by laying together two sheets of the same synthetic resin material as the one used for the aforesaid outer bag (11) and by adhering the edges by heat sealing, and it contains broth (S). The bottom surface (70) has a liquid-draining opening (71) formed on it. Although not shown in the figures, the opening (71) has a string, which is run across the opening, (or a net made from a fiber material) attached together with a seal (73) on the external side of the opening for gathering the steam pressure inside the liquid container bag (72), as is the case with the aforesaid water container bag (12).

The liquid container bag (52) is placed between the partition sheet (68) and the top surface (60) of the outer bag (51), with its opening (71) positioned at the bottom.

When the food/drink item is fish, it is raw or frozen fish that has been cleaned of [illegible], intestines, etc., and cut

in a size that is easy to eat or left as a whole depending on the /124 kind of fish. It is in a state that, once cooked and seasoned, it is ready to be eaten.

The following explains the operation.

The following discusses the case in which are used approximately 100 g of broth and approximately 200 g of fish as the food/drink item (F).

Placing the food/drink item (F) at the bottom side, the pack is placed inside a microwave oven and heated. Approximately 2 minutes and 20 seconds after it is placed in the microwave oven, food F (fish), if frozen, is defrosted, and the broth inside the liquid container bag (52) starts to boil. Approximately 25 seconds after that, the liquid container bag (52) starts to expand by the steam pressure, and the top surface (75) makes intimate contact with the inner side of the top surface (60) of the outer bag (11 [sic]), thus closing the steam-pressure-releasing vent (51 [sic]). When the liquid container bag (52) further expands and reaches a given steam pressure, the steam pressure is applied to the string (not shown) adhered to the liquid-draining opening (71) in a concentrated manner, thus peeling off the seal (73) and allowing the boiled broth to spurt out of the liquid-draining opening (71). Then, the inside of the outer bag (51) becomes pressurized by the steam, and the broth passes through the partition sheet (68) while it is filtered and

collects inside the bottom surface of the outer bag (51), thus immersing the food/drink item (F) in the broth. Meanwhile, the liquid container bag (52), which has become empty, shrinks and is pushed up against the inside of the top surface of the outer bag (51). Owing to the difference in the elasticity of the convex and concave sides of the steam-pressure-discharge regulating packing seal (69), a small gap is created between the liquid container bag (52) and the inside of the top surface, and the steam inside the outer bag (51) is released from the steam-pressure-releasing vent (61) in a regulated manner so as not to drop the inside pressure of the outer bag (51), thereby preventing the outer bag (51) from exploding and also maximizing the steaming effect of the inside of the outer bag (51). The partition sheet serves to set the temperature of the inside bottom (approximately 105 to 120° C) of the outer bag (51) slightly higher than the temperature of the top (approximately 95 to 100° C), and the pressure and convection of the steam create a steaming effect; thus the broth permeates into the fish nicely and seasons the fish without causing the fish meat to crumble or to lose its shape.

Approximately 1 minute and 45 seconds after the broth spurts out, the seasoning is completed. Subsequently, the outer bag (51) is opened, and the fish is taken out.

In the above explanation, the case of cooking fish by permeating a broth into it was explained, but, opposite to the aforesaid explanation, the liquid (water) container bag may be placed at the bottom, and the food at the top, thereby making it possible to steam the food at the top side with the steam generated from the bottom side. In this case, the liquid container bag should be stored in a heat-resistant outer bag that has a steam-pressure-releasing vent. Here, if liquor is mixed in water, food can be seasoned with a better flavor.

If it is desired for the liquid inside the liquid container bag to flow out at a given steam pressure, the pack may be constructed in such a manner that the bag itself explodes, instead of using the seal shown in the figures.

It is also possible to automatically prepare various soups that have water as the base by packing liquid container bags with various kinds of seasonings.

[Effects of the Invention]

With the present invention's food/drink cooking packs explained in the foregoing, using a heat-generating apparatus, such as a microwave oven, novel and convenient methods of cooking food/drink that can give excellent flavor are provided, and this invention contributes greatly to a widespread use of this type of food.

Furthermore, the present invention makes it possible to cook materials that have been treated as primary or secondary cooking materials in the frozen food industry easily without further processing by handling them like instant food; thus, frozen food can be put to effective use, and the cooking cost can be reduced.

Moreover, the present invention makes it possible to prepare table luxuries, such as coffee, tea, etc., by a simple process of placing and heating them inside a heat-generating cooking apparatus and also makes it possible to season various foods with flavors that have not been available.

4. Brief Explanation of the Drawings

Figure 1 is a cross-sectional drawing of a food/drink cooking pack of the present invention. Figure 2 is a cross-sectional drawing of the outer bag. Figure 3 is a cross-sectional drawing of the liquid (water) container bag. Figure 4 is a detailed drawing of the area around the hot-water-drawing opening of the liquid container bag. Figure 5 is a cross-sectional view of the section indicated by arrows 5-5. Figure 6 is a cross-sectional drawing of the food/drink container bag. Figure 7 is a cross-sectional drawing of another food/drink container bag that has a shape different from the one shown in Fig. 6. Figures 8 and 9 are explanatory drawings of the operation. Figure 10 is a cross-sectional view of another embodiment food/drink cooking pack. Figure 11 is a cross-

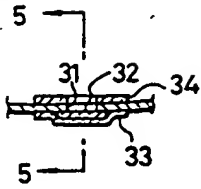
sectional drawing of the outer bag. Figures 12 and 13 are explanatory drawings of the operation.

/125

10, 50	drink/food pack
11, 51	outer bag
12	liquid container bag
13	food/drink container bag
20, 60	top surface
21, 61	steam-pressure-releasing vent
22, 62	bottom surface
23	hot-water-draining opening
31	hot-water-draining opening
33, 73	seal
52	liquid container bag
71	liquid-draining opening
W	water
F	food

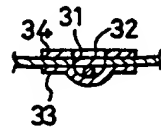
第 4 図

[Figure 4]



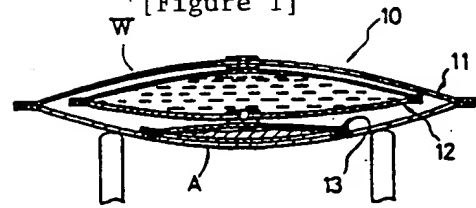
第 5 図

[Figure 5]

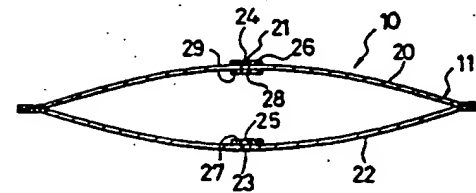


第 1 図

[Figure 1]

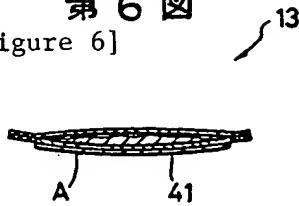


第 2 図 [Figure 2]

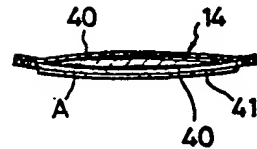


第 6 図

[Figure 6]

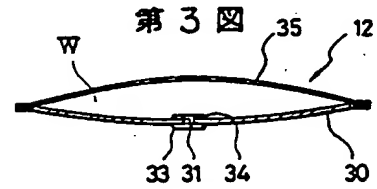


第 7 図 [Figure 7]



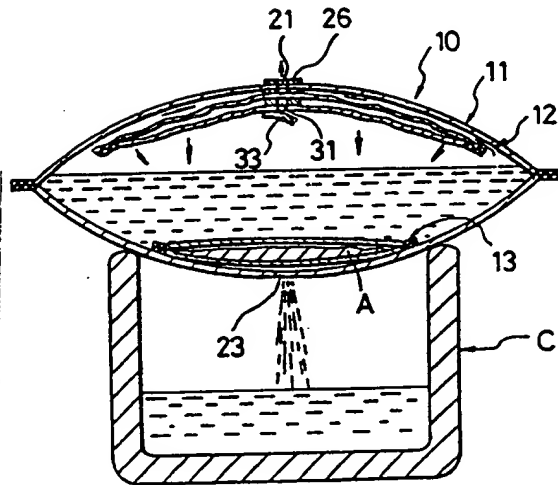
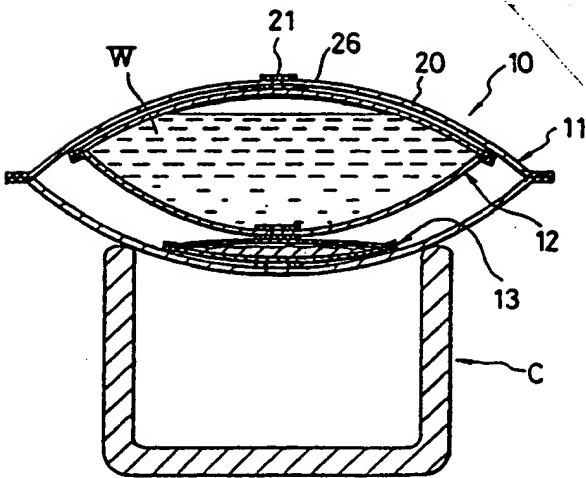
第 3 図

[Figure 3]



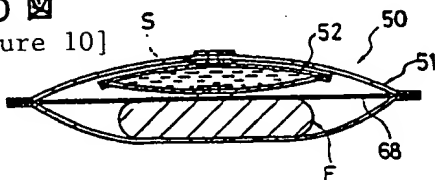
第 8 図 [Figure 8]

第 9 図 [Figure 9]



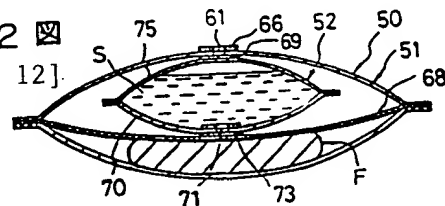
第 10 図

[Figure 10]

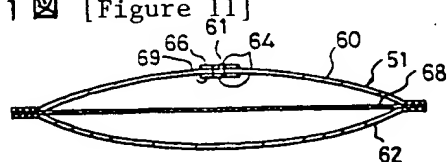


第 12 図

[Figure 12]



第 11 図 [Figure 11]



第 13 図

[Figure 13]

